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FREEDOM 75 - MEMO

TO: Transportation Planning May 31, 1966

FROM: Martin Adler

SUBJECT: Transportation Assumptions for the Bicentennial Exposition Site

The following are the present assumptions for the road network and transit improvements required for the Bicentennial. Following each of these are the unanswered questions which need final inputs from Transportation Planning.

1. Ringroad (Columbia Point North Road) from Columbus Circle around the northerly and easterly edge of Columbia Point to the bridge from Columbia Point to Thompson Island.

This road is a key ringroad in the system of Columbia Road, William Day Boulevard, and the proposed Sunday drive to Thompson Island and onto Morrissey Boulevard.

The present assumption for the road width is 100' (sidewalks @ 10'; service lane 8'; 4 moving @ 12'; median 16').

Question: What exactly happens to Columbus Circle? Are there new land takings and/or new ramps, etc., etc? How much will this cost?

2. Road along the southern edge of new land fill at Columbia Point from Morrissey Boulevard to the new bridge.

The present assumption is road width of 100' (as #1).

Question: What exactly is the traffic circle to be at Fox Point that connects Morrissey with South Columbia Point Drive?

3. Vehicular bridge from Columbia Point to Thompson Island.

Present thinking is that it should be a width of 62' (4 roadways @ 11'; 6' median; 2 @ 6' sidewalks).

Question: Is this the appropriate width on a cost benefit basis? Or are we making too much capacity for a non-main artery roadway?

Question: Can this bridge also serve the proposed transit line?

Question: Would a tunnel (or three 15-foot tubes rather than one large tunnel) be preferable from the aesthetic and traffic flow viewpoints, especially if we are creating land fill at both sides of the bridge or tunnel connection?

4. Present thinking for the major roadway on Thompson Island is for a central service road/spine of 100' row up to intersection and perhaps 80' north of this.

Question: Is this the most appropriate given the relatively narrow width of the new land, or should we perhaps develop one-way pairs?

5. Bridge connection from Thompson Island to Squantum.

Present thinking calls for a bridge width of 62' (as in #3).

Question: Is this the most desirable? And can we also use this as a right of way for the transit line?

6. New road connection from the end of this bridge to the junction of East Dorchester St. and East Squantum St.

Question: What should be the right of way widths and road characteristics for this northern road?

7. What should the characteristics and width be for that existing part which connects the new previously-mentioned street with Morrissey Boulevard?

8. What should the characteristics and width be for the street joining Hancock St. to the junction of East Squantum and Morrissey?

9. Present thinking calls for a road from Morrissey Boulevard to the proposed Squantum Point Bridge (old Victory Road).

Question: What is the proposed alignment for this road and what are its characteristics? There will be an additional connection from the Squantum Bridge to the Point Quanto Development area, not defined as to character and volumes.

10. Is there a possibility of connecting the interchange at the Neponset River in Milton with a road running along the flats to Hancock St. and from Hancock St. along the flats to the Squantum Air Base?

11. Is the proposed new bridge at Neponset adequate to carry the projected loads for the World's Fair. Money in bill is 1.2 million dollars.

12. Transit:

The most acceptable transit system at the moment from the point of view of feasibility, and especially financing, seems to suggest a form of aerial/ground bus on a separate right of way from a transfer at Columbia Station, down Mt. Vernon St., with a stop at the present sewage treatment plant area, to Thompson Island, 3 stops on Thompson

Island, on to Squantum with a final stop at the proposed shopping center (which is located approximately north of the junction of Squantum St. and Morrissey Boulevard).

Question: Trying to think ahead towards 1972-3, what is your thinking on the best form of transportation equipment and/or system to accomplish the above?

We have in mind a second, third, or fourth generation of the present Westinghouse System. This will provide us with flexibility as far as height goes; that is, we could go up in the air to avoid grade crossings and come to ground level and perhaps even go into open cuts.

We would like, however, the latest thinking on these questions of heights, transfer station, grade crossings, etc., etc.

13. Squantum Point Bridge:

Present thinking is for the bridge to be connected at Freeport St. to the central artery with a "full interchange".

Question: Could we have some sketch of what this exactly is; how much it would cost; recommendation on which agency will pay for it?

14. On payments, which agency is the most likely to fund the above improvements?

15. Liaison with Quincy on the proposed roads in their town.

Will you do this?

16. Traffic Statement:

From the previous memo on attendance, hourly breakdowns, etc., can we make a table that will show the traffic volumes on the network at these peak periods?

We should have figures on hand to answer the statements of "too many cars on the road - will you be able to handle them?".

XII TECHNICAL SUPPLEMENT

D. Transportation

(All figures refer to the peak design day which will be approximately 270,000 visitors, and will occur eight times during the summer - on eight sundays. To design transportation for facilities for higher densities would result in wasteful over-building, because these extreme peaks would occur only once or twice. And, to design for the average daily attendance of _____ would not give the weekend visitors the facilities required.)

A. Vehicles

1. 40% of attendance by private auto = _____ visitors
2. At 3 per auto = _____ autos
3. Number of cars per peak hours

	hour	cars	#lanes reqd.
a. entering Columbia	_____	_____	_____
b. entering Thompson	_____	_____	_____
c. departing Columbia	_____	_____	_____
d. departing Thompson	_____	_____	_____

Capacity of proposed lanes,

Capacity of main system for vehicular i.e. There will be no monumental traffic jams because the existing highways can carry the cars, since the peak hours for the Fair are off peak for workers/visitors to the City/Downtown.

B. Rapid Transit

1. A System

This is an extension/spur of the metropolitan transit system. The spur will consist of a single railway carrying trains in both directions between the main line of (Dorchester?, Old Colony? hedge this?) to Columbia Point, and Thompson Island.

Transportation Impacts

A. Introduction

Until figures refer to the peak design day which will be approximately 20,000 visitors, and will occur eight times during the summer - on eight sundays. In design transportation to facilitate the Jetport would require an extensive after-building, massive times between roads would occur only once in twice, and, in design for the leading daily attendance of _____ would not give the personal visitors the facilities available.

B. Impacts

1. Use of alternatives by private auto - _____ visitors

2. If 3 per auto - _____ autos

3. Double it cars per peak hours

	Time	Cars	Buses
a. Entering Columbia	_____	_____	_____
b. Leaving Thomaston	_____	_____	_____
c. Entering Thomaston	_____	_____	_____
d. Leaving Columbia	_____	_____	_____

Capacity of present lanes,

Capacity of main routes in vicinity is... There will be no commercial traffic lane because the existing highways can carry the cars, since the only buses for the fair are all open the waterways/railways to the City/Jonesboro.

C. Route Impacts

1. A System

This is an alternative/part of the metropolitan transit system. The spur will consist of a single railway carrying trains in both directions between the main line at /Jonesboro, Old Colony Bridge (Exit) to Columbia Point, and Thompson Island.

The line will be enclosed, below grade, on Mount Vernon Street, and thru a tunnel onto Thompson Island where it will also be below grade.

There will be two stops on Thompson and two on Columbia Point.

Length of Spur	_____	feet
Capacity of train	_____	30,000 persons/hour in each direction maximum
	_____	persons/train, standing room
Length of car	_____	
Length of train	_____	
Cars per train	_____	
Trackage	conventional and steel rails	
Motor system	electric, third rail	
Operation	by MBTA, until 3: A.M.	
	number of trains in operation can be adjusted throughout the day to accommodate different peak demands in visitor volumes at least from downtown points.	

2. B System

The B system is a feeder system, which will

a. take the visitor from the parking lots on Columbia Point and Thompson Island into the Fairgrounds.

b. serve as a complete loop around the grounds, and linking the two areas of exhibits - Thompson Island and Merry Universe

This system would serve as a prototype system, and does not now exist. It would have to be flexible so that it could operate off peak hours as well as carry a peak of 10,000/persons/hour.

The B system would run along the median strip, as a separate right of way. It might be along grade in part, elevating to permit cross traffic and to intersect with the A system transfer points.

The line will be sectioned, below grade, on Mount Pearson
Street, and then a tunnel onto Thompson Island where it
will also be below grade.

There will be two stops on Thompson and two on Columbia
Point.

Length of Line _____ feet

Capacity of Trains _____ 30,000 passengers per hour during rush hour periods

_____ passengers standing room

Length of Car _____

Length of Train _____

Cost/per train _____

Propulsion _____ Conventional rail steel wheels

Power Source _____ Electric, third rail

Operation _____ By MBTA, until it is

_____ Number of trains it operating may be adjusted throughout the day to accommodate different peak demands in ridership between at least five headways.

2. I System

The I system is a fixed system, which will

1. Take the station from the parking lots on Columbia Point and Thompson Island take the Fairgrounds.

2. Empty at a complete loop around the grounds, and letting the two lines of Boston - Thompson Island and Penny Universe.

This system would serve as a circular system, and take not more. It would have an flexible as that it would operate all year since as well as carry a year or longer/passenger.

The system would run along rail bridge, as a separate right of way. It might be along point in part, alongside to permit cross traffic and it interpret with the I system transfer points.

Fred: discussion on possible types:

-problems: number of on-off points - minirail in Canada has theirs every 1,500 feet. We show every 1,000 so that a person would not have to walk more than 500 feet to a stop. Also, we show one route "tour" going around Thompson, North-South, and the parking lot - to Merry Universe - to parking lot going East-West. Can we do it?

C. Water Transportation

1. There will be boat service/rides from the lagoon on Thompson

a. around the island, with a stop at the landing by the last stop on the A system and the United States pavilion.

b. to Merry Universe

c. to downtown Boston's Long Wharf, for visits to the Freedom Trail, and to accommodate downtown-located visitors to the Fair.

2. Pleasure boat rides around the harbor, day and evenings, will leave from the lagoon and Merry Universe.

3. High speed vessels (air-cushion) will connect the airport with the lagoon.

4. Long distance, high-speed vessels - hydrofoils/air-cushion - will serve other points of historical interest - e.g. Salem, Plymouth, Cape Cod.

RAPID TRANSIT USE PROJECTIONS

A. on Thompson Island
(400 acres fill and 100 acres land=500 acres)

		Daily Rides
1. 200 acres housing;		
@ 50 du/acre - 10,000 du		
@ 2.5 persons/du - 25,000 persons		
1 of 3 use transit to work=8,500 riders or		
	outbound 8-9 a.m.	8,500
	inbound 5-6 p.m.	8,500
2. 200 acres University and R & D facilities @ 830 persons/acre* (workers, visitors, students) = 166,000		
2 of 3 use transit-110,000 riders/day-220,000 riders.		
Arbitrary division of 1/2 R & D and workers, 1/2 students =	inbound 7:30-9:00 a.m.	110,000
	outbound 4:30-6:00 p.m.	110,000
	sub total	237,000
3. Cultural Events		
Evenings, weekends, summers, winters		
7-10,000 seat amphitheatre @ 1/2 transit user =	inbound 6-7:30p.m.	3.5-5,000
	outbound 10:30-11 p.m.	3.5-5,000
Opera house etc. 2,000 seat @ 1/3 transit=	inbound 6-8:30 p.m.	2,500
	outbound 11-12 p.m.	2,500
	sub total	15,000
	Maximum total	252,000

* Based on Government Center's 50,000 workers, visitors for 60 acres.

B. on Columbia Point
(300 acre fill, 100 acre existing undeveloped=400 acres)

		Daily Rides
1. Housing		
a. Columbia Point existing-	7,000 persons	
b. Proposed 200 acres @ 50 du= 10,000 du @ 3.0 =	30,000 persons	
	37,000 persons	
.5 of 3 use transit =	6,250 riders= 12,300 riders/day	
outbound 7:00-8:30 a.m.		6,250
inbound 4:30-6:00 p.m.		6,250
2. B. C. High		
Riders ?		
3. Other existing uses ?		
	subtotal	12,500
Weekends		
4. Schoolday Stadium?		
20,000 seats 1/2 by transit= 10,000 rides		
inbound (1 hour period)		10,000
outbound (1 hour period)		10,000
5. Merry Universe, open all year 50 acres, evenings and weekends, peak in summers		
Evenings---1-2,000 persons---700 riders 1/3 by transit		
inbound-outbound (in 5 hours)		1,400
WEEKENDS--5-10,000 persons1/3 by transit= 3,500 riders		
inbound (over 12 hour period)		3,500
outbound (over 12 hour period)		3,500
	subtotal	28,400
	Total	40,900

C. Transit for Bicentennial Period

April - October 1975

A. Columbia Point

1. use existing residential figure

2. new housing on the Point will be for workers at the Fair

3. Schoolboy Stadium

4. World Fair figures apply for Merry Universe and

B. Thompson Island

see attached; Arthur D. Little estimates 1/2 of visitors will arrive transit

therefore, 1/2 of all attached should give us the transit volumes.

Estimate need for the system to carry 35,000/hour on the grounds, (Montreal figure) since it will be the principal method of getting people around the grounds.

Other systems will provide slower connections laterally.

SQUANTUM

1. --- Persons in Squantum at present

2. 7-10,000 du proposed for point Squanto plus Shopping Center, Light Industry

Therefore, we should estimate transit usage in this this sector, and especially where the "Westinghouse System" should connect with the regular system

POSSIBILITIES:

1. Connection at Neponsit with the Old Colony.
Why? to serve the South Shore residents, who can transfer to the World Fair line here.

How many will do so?
What will be the permanent usage here?

2. No connection with Old Colony or at least no permanent one

Riders pick up train at Shopping Center stop or Squantum Street stop.

MEMORANDUM

TO: Fred Salvucci DATE: June 24, 1966

FROM: Marty Adler

SUBJECT: Rapid transit for the Bicentennial

Could you check through the attached?

We want to send it off to Westinghouse so that they can run through a systems check and cost check for us.

But I would like your side to fill in the blanks and check out the theory before we send it out.

I hope you can get the MBTA in on this at this stage.

MA:m also - check w/ Boland on the assumptions for densities.

RAPID TRANSIT USE PROJECTIONS

A. on Thompson Island (400 acres fill and 100 acres land=500 acres)

		Daily Rides
1.	200 acres housing;	
	@ 50 du/acre - 10,000 du	
	@ 2.5 persons/du - 25,000 persons	
	1 of 3 use transit to work=8,500 riders or	
	outbound 8-9 a.m.	8,500
	inbound 5-6 p.m.	8,500
2.	200 acres University and R & D facilities @ 830 persons/acre* (workers, visitors, students) = 166,000	
	2 of 3 use transit-110,000 riders/day-220,000 riders.	
	Arbitrary division of 1/2 R & D and workers, 1/2 students = inbound 7:30-9:00 a.m.	110,000
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	sub total	237,000
3.	Cultural Events	
	Evenings, weekends, summers, winters	
	7-10,000 seat amphitheatre @ 1/2 transit user = inbound 6-7:30p.m.	3.5-5,000
	outbound 10:30-11 p.m.	3.5-5,000
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* Based on Government Center's 50,000 workers, visitors for 60 acres.

Swenson

B. on Columbia Point
(300 acre fill, 100 acre existing undeveloped=400 acres)

		Daily Rides
1. Housing		
a. Columbia Point existing-	7,000 persons	
b. Proposed 200 acres @ 50 du= 10,000 du @ 3.0 =	30,000 persons 37,000 persons	
.5 of 3 use transit =	6,250 riders= 12,300 riders/day	
outbound 7:00-8:30 a.m.		6,250
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Riders ?		
3. Other existing uses ?		
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3. MONTHLY ATTENDANCE

Month of Exhibition	Percentage Distribution of Attendance
April (3 days)	1.71%
May	14.34
June	17.34
July	21.16
August	23.07
September	13.38
October (27 days)	9.00
Total	100%

4. DAILY ATTENDANCE

a. Peak Day 350,000
(likely to occur at the end of the Exhibition).

b. Design Weekend Day. 270,000-295,000
To be used in the design of Visitor Services. (This, or greater attendance will occur approximately 8 times, during July and August at weekends).

c. Design Week Day. 185,000
To be used in the design of commercial facilities such as restaurants. (This, or greater attendance will occur approximately 40 to 45 times.)

d. Average Day (26,000,000/182 days) 143,000

e. Peak in-park attendance occurs in the early afternoon and is approximately 70% of the total daily attendance.

5. HOURLY ATTENDANCE

The following table shows the in-park crowd at hourly intervals at selected attendance levels.

Hourly Interval	Crowd When Total Daily Attendance Is: 185,000	270,000	350,000
9–10 a.m.	33,300	43,200	56,000
10–11	64,700	83,700	108,500
11–12	86,900	116,100	150,500
12– 1 p.m.	105,400	140,400	182,000
1– 2	118,400	164,000	210,000
2– 3	127,500	178,200	231,000
3– 4	129,500	189,000	245,000
4– 5	118,400	189,000	245,000
5– 6	103,800	183,600	238,000
6– 7	94,400	175,500	227,500
7– 8	88,800	164,000	210,000
8– 9	72,200	151,200	196,000
9–10	40,700	124,200	161,000
10–11	22,200	97,200	126,000
11–12	——	54,700	73,500
12– 1	1/	24,300	31,500

1/ Assumes closing at midnight.

6. DISTRIBUTION OF VISITOR TIME

The following table shows the distribution of visitor time spent on the four major parts of the Exhibition. This distribution is proportional to the area of lots allocated for exhibit structures on the four parts, with an adjustment for such facilities as the stadium (MacKay Pier). There are three as yet unknown variables which could change this distribution. The first is the amount of investment per square foot which individual exhibitors will put into their exhibits; the second is the amount of imagination put into each exhibit; and the third is the relative amount of exhibit space within each part of the Exhibition.

Thus, these figures should be used with caution.

Area	Percentage of Visitor Time
MacKay Pier	9.3%
South extension of Ile Sainte-Hélène	26.6
Ile Notre-Dame	42.9
North extension of Ile Sainte-Hélène	21.2
Total	100%

7. ARRIVAL PATTERNS

Gate	185,000 Day	270,000–295,000 Day
MacKay Pier	45.5%	37.0%
Ile Sainte-Hélène south	36.0	44.5
Ile Sainte-Hélène north	18.5	18.5
Total	100%	100%

The difference in arrival patterns between the two days is because the one (185,000) is normally a weekday when out-of-town tourists form a greater proportion of attendance, and the other (270,000-295,000) is normally a weekend day when local residents form the greater part of attendance. The out-of-town tourists will tend to use the MacKay Pier entrance, while a large proportion of local residents will use the Ile Sainte-Hélène entrance, via the Metro Station.

The two main variables in this estimate are the local origins of all visitors (hotel, motel, trailer park, apartment, house, etc.) and the mode of transportation from this local origin to the Exhibition. Further refinement of this estimate of arrival patterns depends on more detailed investigation of the two variables.

It should be noted that the above arrival pattern is the arrival at the three gates only. Once inside the Exhibition the visitor may, for example, go immediately from the MacKay Pier entrance to Ile Sainte-Hélène or Ile Notre-Dame. Thus, the arrival patterns at the four parts of the Exhibition site will be different than at the entrance gates. The departure pattern will be very similar to the arrival pattern, the main variation being a heavier emphasis on La Ronde where most visitors will be between the time that National and private pavilions close and the Amusement Area closes.

TRANSPORTATION TO THE SITE

I. Logan International Airport

Visitors may arrive to Boston by both domestic and external flights at the Logan International Airport. This is located at approximately _____ miles from the Bicentennial site.

Limousine service from the Airport to downtown Boston is available.

There is also a direct rapid transit connection from the Airport to downtown and a transfer from the rapid transit line leading directly to the Bicentennial site.

II. Railway

Long distance trains from the south (Washington, Philadelphia, New York, Providence) lead to the center of the city at the New South Station.

From South Station there is a direct connection to the Old Colony Line which is a direct rapid transit to the Bicentennial site.

It is approximately ten minutes by subway to the Bicentennial site from South Station.

III. Public Transportation--Metropolitan Bay Transit Authority

The MBTA will operate surface and subway service directly to the exhibition site.

(a) Busses - Surface transport will discharge and pick up visitors at two terminal points close to the Bicentennial site. The first terminus is situated at the Columbia Point section; the second at the Squantum Air Base section.

From these two points secondary transport will take the Bicentennial visitor onto the exhibition grounds.

((1) Surface transport will discharge and pick up visitors at selected rapid transit stations, for instance, South Station. The Greater Boston bus service will not attempt to bring the visitors directly close to the exhibition site and the parking lots provided, rather they will attempt to transport persons from the surface bus transport onto the rapid transit line.)

(b) Subway - The MBTA subway service will provide direct transport to terminal points near the site where transfer will be made to special rapid transit leading on to and into the fairgrounds itself.

(1) The central subway system will connect at transfer

points internally to the Harvard Ashmont line, from this line there will be a transfer at Columbia Point (or Sabin Hill) onto the special Bicentennial Exposition rapid transit system

(2) The rapid transit on the Old Colony extension leading from South Station to the south shore suburban points will have a terminus at Neponsit and from here the visitor will transfer to the special Bicentennial rapid transit system.

The Bicentennial rapid system will thus make an arc connecting these two rapid transit points which are in fact different rapid transit systems. Therefore the load of rapid transit visitors will be at least 50% of the total visitor attendance, can be broken by this looping system.

Mike, we need here a paragraph on the capacity of the central system, the capacity of the Old Colony system and the theoretical capacity of the loop system which will transfer the people onto the site.

IV. Public Transportation - New England and Area Wide Bus Services

There will be certainly a large number of people coming to the Bicentennial from the Greater Boston area and from New England.

It is felt that the one day visitors will arrive by air conditioned busses, and provision will be made in the two parking areas for these busses.

The arrival points of busses in parking lots are described below based on origin from north and west and origin from south.

(a) Busses - Intercity

The ordinary intercity bus system (from New York, Philadelphia or Albany, etc.) will arrive at the new South Station. From there the direct access is onto a transit system which will lead onto the exhibition site via the Old Colony branch as described above.

V. Transportation to the Site by Automobile

An interstate and regional highway system will exist by 1975 that will make access to the site feasible.

Due to the fact that the visitor hours are off the ordinary worker-peak volumes, it is felt that the lane capacity of this highway network will be sufficient to carry the extraordinary loads for the six month period. However, there are certain ramp adjustments and

off and on interchange requirements that must be met and these are described in Appendix 1. and shown on Map 1. attached.

(a) Visitor Parking - Fully 50% of visitors are expected to arrive by automobile. There will be no parking of visitors automobile on the Bicentennial exhibition site itself. However there are provided two mammoth parking lots near the Bicentennial site for those persons arriving from north and west and for those persons arriving from the south and southwest. These are described as follows:

(1) Columbia Point Parking Lot - 125 acres - 12,000 cars.

(2) Squantum Air Base Parking Lot - 100 acres - 9,000 cars.

(From each of these two parking lots special transport on the ground will be available to transport people from the parking lot onto the Fair ground gate.)

(b) Exhibition Employees - For personnel working on the exhibition site a number of parking facilities are being proposed.

(1) At Columbia Point _____ cars

(2) At Squantum _____ cars

(3) _____(something else that you guys can figure out)

VI. Water Transportation to the Site

As the site will be surrounded by water on two sites, it offers a prime attraction for marina activity as well as offering a possibility for exhibits of water transportation of the future, that will serve not only as exhibits, but serve a functional use as well.

(a) Marina - There will be approximately ____ marina spaces provided at the exhibition site. This will be divided on the east for _____ spaces and on the west _____ spaces, protected by a new breakwater.

This marina will of course remain as a permanent asset to the region after the Fair use.

(b) Special Water Transportation - it is felt that there will be special high speed hydrofoils or other water transport vehicles available by 1975 that will perform the following functions.

(1) Serve as pleasant and rapid ways to take the Bicentennial visitor from the Bicentennial site to the downtown Boston waterfront, where he will see a bit of the old sailing days in the form of rehabilitated and converted granite warehouses and where he can visit the downtown historic sites (Freedom Trail) as well as visit downtown Boston entirely on foot.

(2) There will be a high speed system leading directly from the Airport to the site by water for those people who will arrive by plane for a one day visit.

(3) There will be long distance large capacity high speed transport for taking people from the exhibition site to such historical areas as Plymouth, Salem and perhaps farther north to Maine as well. One of the prime reasons for the Bicentennial being in Boston is its proximity to historical areas that are of interest from the Revolutionary days. Many of these areas are being, or have been, restored, and by 1975 they will be an absolute necessity for the people who visit the U.S. Bicentennial. High speed water transport will put many of these historical sites within one hour's pleasant journey from the Bicentennial site itself.

VII. Air Transportation by Helicopter

There will be a strong possibility of intercity heliports by 1975 and provision can certainly be made on some part of the exhibition ground for a heliport of this nature.

MA:v

(2) There will be a high speed system leading directly from the airport to the site by water for those people who will arrive by plane for a one day visit.

(3) There will be long distance large capacity high speed transport for trading people from the outskirts, site to the main historical area of Yuanmin, which are further north to Xuzhe as well. One of the principal reasons for the Nanchang Uprising being in 1927 is its proximity to historical areas that are of interest for the Revolutionary Leys. Many of these areas are local, or have been, restored, and by 1977 they will be in abundance necessarily for the people who visit the Nanchang Uprising. Each should not't transport will not only of those historical sites within are journey pleasant journey from the surrounding city itself.

VII. The Implementation of Policies:

There will be a strong possibility of introduction delivering by 1999 and completion may be ready on some part of the exhibition ground for a delivery of this nature.

MX:v

INTER-OFFICE COMMUNICATION

TO Martin Adler

AT

FROM Transportation-Engineering Department

AT

May 20, 1966

ATTENTION

SUBJECT Freedom 75

The ringroad around Columbia Point connecting the proposed bridge to Thompson Island and Morrisey Boulevard should have the following cross-section: 8' - 12' - 12' - 16' + - 12' - 12' - 8' + sidewalks (2 @ 8'). The left turning movements in this area may not be too critical and hence we could reduce the size of the median for traffic reasons to 6'.

The bridge should have ~~four~~ 11' lanes and a 6' median + sidewalks (2 @ 6' ?)

The above dimensions exclude any provisions for rail mass transit.

The roadway to Squantum up to and on to Thompson Island should have the following cross-section: 8' - 12' - 12' - 16'+ - 12' - 12' - 8'+- sidewalks (2 @ 8' ?) The left turns here would be more frequent. The roadway width could probably be reduced somewhat north of the center of Thompson Island. (no median).

These dimensions are given again without consideration for a rail mass transit system.

Fred Salvucci is now working on a memo to you relative the major traffic improvements at Freeport Bridge, etc.

Michael T. Gruenbaum, P.E.
Chief Transportation Planner

William R. McGrath, P.E.
Transportation-Engineering Coordinator

MTG:ml

#3262

MEMORANDUM - FREEDOM 75

To: Mike Gruenbaum
(Informational copy to Mike Collins)

From: Martin Adler

Date: May 17, 1966

Subject: Right-of-Way Information for New Roads; Exposition Sites

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On the assumption that we are now incorporating a roadway going from Columbia Circle around the northern edge of Columbia Point and a roadway going from the existing or new circle at Savin Hill along the southern edge of the new land fill; the question is what should be the rights-of-way of these roads. Should we include the center strips that are used for lighting or grass or left turn lanes or what?

Also, could you list for us the proposed right-of-way of the bridge connecting Columbia to Thompson. As I understand it, it's lanes plus median strip plus one or two sidewalks. Could you indicate the appropriate widths?

Concerning the roadway to Squantum up to and onto Thompson Island connecting with the above mentioned bridge (or tunnel) what should the right-of-way be for this. We are talking about a roadway that probably should contain a median strip or columns for a Westinghouse or similar system of aero busses. Should this width of roadway be continued to penitrate into the island to a point just below Thompson Academy to accommodate new intensive uses for the exposition and post-exposition?

Could you also begin to indicate for the appendix of the report those traffic improvements at least in word form that are needed at the Freeport Bridge, the Columbia Point Circle, Savin Hill Circle, etc., etc.

I don't feel at this time that we have the staff for detailed engineering but we should be able to without too much time in the nature and extent of proposed traffic improvements so that we will know the money inputs that are necessary off the fair grounds to accomplish the traffic objectives.

MA/mb

May 17, 1966

Westinghouse Electric Corporation
Transportation Systems Department
Research and Development Center
Pittsburgh, Pennsylvania 15235

Gentlemen:

This non-profit corporation is the co-ordinating body for New England and Boston's plans to host the world celebration of the American Revolution Bicentennial in 1975. Towards this end, we have developed certain basic plans for a new area of the city to be built from existing peninsula and island (see enclosed information).

It is evident that a rapid transit system of some nature is vital to the success both of the World exposition and the proposed new community after. Our planners in the Transportation-Planning division of the Boston Redevelopment Authority have suggested that your demonstration project - South Park Project - is perhaps the most logical system at the present to be incorporated into our planning. The hourly capacity, which we understand to be about 20,000, is somewhat in the order necessary for the exposition. And, of course, we look towards the demonstration project as being but the first generation of your system. Therefore, we would very much like to discuss with you further the possibilities of incorporating such a system into our planning and perhaps obtaining from you the costs and some further detailing on such a system.

We wonder if there is someone in the New England area with whom we could speak on this. Our limited planning budget at the moment does not permit our staff to meet with you in Pittsburgh. If your schedule does not call for any New England visits in the near future, perhaps we can accomplish our inquiry by mail using certain base maps that we are preparing at the moment.

Yours sincerely,

Martin R. Adler
Planning Co-ordinator

MRA/mb

Yours sincerely,

Derek T. Adler
Planning Co-ordinator

FREEDOM 75

MEMORANDUM

TO: Mike Gruenbaum
BRA Transportation Planning March 10, 1966

FROM: Marty Adler

RE: Transportation Planning for the 1975 Freedom Fair

You have on hand the document from Arthur D. Little that gives us the estimated volume of people plus the percentage breakdown by rapid transit and automobile.

You also have attached to this memo a copy of the internal document on transportation worked out by the Expo 67 planners; therefore, we have a guide as to how this part of the package should be put together. It should be borne in mind that Montreal has 26 million visits and we have 20 million visits (however, Montreal feels that our visitors are too few and we can indeed attract 26, but at present we are sticking with the 20 because all the other figures are based on it).

Below are, in outline form, my assumptions on the transportation system. You will note that most of them are as we have previously discussed, with perhaps one major change on rapid transit.

(1) Automobile Access

Assumptions are:

(a) Present (1975 that is) lane widths and road access to the site are adequate, that is I 95 93 Inner Belt Turnpike, is satisfactory.

(b) Egress in a multi-directional fashion from this system is not satisfactory, therefore, recommendations for ramp changes and multi-directional interchanges at at least two key points are to be made by you.

(c) Parking Areas - there are two parking areas, at Columbia Point, either existing land or created land, not less than 100 acres to hold not less than 12,000 cars, these are for people from the north and west; another parking area is the Squantum Air Base, which is not less than 100 acres for the same number of cars and will serve people arriving from the south.

To: [illegible]

Re: Transcription planning for the 1973 Preston visit

Mike Gruenbaum March 10, 1966

Transportation Planning for the 1975 Freedom Fair

Here, transportation planning is to firm up whether the interchange at the Commercial Point is required with a bridge connection to Squantum at Boston Edison. This bridge connection is to be costed out by our engineers--will it be bascule bridge or fixed high level span, or what? (I assume that it will have to be a bascule bridge because of the boat traffic behind it. The question, therefore, is whether this is indeed the modern way and whether MDC will build such a bridge.)

If this bridge at Commercial Point to Squantum is not recommended you will have to tell us what the interchange movements is at the Neponsit MDC bridge crossing that is required for automobile traffic. Transportation planning will also advise on the ingress into the Boston Edison property; what new roads are necessary, if any, and what their general alignments will be.

(2) Rapid Transit

The present agreement on rapid transit is an extension from Neponsit of the Old Colony line to lead onto the site and dead end. If additional monies are available, this will not dead end, but will continue on under Dorchester Bay to serve South Boston residential and industrial districts, and connect into the main stream of sub-surface transit at some point.

However, I have come up with another theory which deserves to be explored by you at first, then with MBTA, for liason, then perhaps with Westinghouse or some other outfit. Theory follows:

We have two rapid transit lines which go close to the site, one is what I would call regular city system - Harvard-Ashmont line, and the second is South Station to South Shore Old Colony line.

It would seem to me to be more logical to break up the rather enormous amount of people arriving by rapid transit, which is estimated at fully half the total attendance. This is additionally sound if many of the visitors to the site will be from Boston area and will arrive on some form of subway system from residences either to the north or to the west and even perhaps to the southwest. It would therefore seem to be logical for these people to be able to continue on the central subway without having to change at South Station from the Harvard-Ashmont to the Old Colony.

As I understand it such a connection would probably involve a great deal of walking through tunnels and

what not to connect one from the other.

Therefore, I would suggest the following system, where an aerial system such as Westinghouse or regular Monorail would make a semi-circle leading from the Columbia Point station on Harvard-Asmont, picking up perhaps at the parking lot on Columbia Point, going on to the Fair grounds, stopping at one central station where people who have arrived from the north and Columbia Point will disembark, the vehicle then goes to the Neponsit station on the Old Colony empty; it picks up people from the Old Colony at Neponsit, goes north again, stops perhaps at the mammoth parking lot to pick up people from the parking lot, then continues north to the central station where people get out.

We therefore have devised a system which is empty in one direction and fills up in the other, and it would be a shuttle type operation which could have a permanent value after.

The problem in the above system is that it puts all the load of people on to a rapid transit system, that is not only from the regular transit system in the town, but also all parking lot people must take the transit. You people should check out whether this is a sound idea or whether the volumes are such that is unsound, not only in physical volumes but proposed stops at the parking lots, or perhaps a branch line to the parking lots; does this make any sense at all.

(3) Another Theory is Proposed As Follows:

The rapid transit system would take care of people arriving on rapid transit and Old Colony branches and would loop them onto the site as described above.

A secondary system whether steel wheels, rubber tires, plain old busses or Greyhound type vehicles, such as at the New York World's Fair, would take people from the parking lots onto the site and make a loop in that direction, thus breaking up the load of arrivals and departures.

(4) On Site Circulation

At this point in time we do not have worked out a full site plan, therefore, proposals for on-site circulation are not going to be proposed by me for some feedback from you. However, in reading the Montreal system, I hope you people would bear in mind their Minirail system, and

March 10, 1962

Transportation Planning for the 1972 Tokyo Olympics

What not to consider one from the other.

Therefore, I would suggest the following system where certain system such as Westinghouse or regular Torontransit would have a dual-circle loading from the Columbia Point station on Mercer-Mount, picking up passage at the parking lot on Columbia Point, going on to the Kelly Parkade, stopping at the central station where people who have arrived from the north and Columbia Point will disembark, the vehicle then goes to the Dogpatch station on the Old Colony empty; it picks up people from the old colony at Dogpatch, goes north again, stops between the Concrete Parking Lot to pick up people from the parking lot, then continues north to the central station where people get out.

We therefore have devised a system which is empty in one direction and fills up in the other, and it would be a shuttle type operation which could have a convenient value after.

The trouble in the above system is that it puts all the load of people on to a rapid transit system, that is not only from the regular transit system in the town, but also all parking lot people must take the transit. Now people should check out whether this is a sound idea or whether the volumes are such that it can succeed, not only for physical volumes but reserved stops at the parking lots, or perhaps a bypass line to the parking lots; each of this looks very dense at all.

(3) Another theory is proposed as follows:

The result was all cycles would take care of people arriving on rapid transit and old Colony branches and would loop them onto the site as described above.

A secondary cycles would be used wheels, rubber tires, platform bicycles or oriented type vehicles, such as at the New York World's Fair, would take people from the parking lots onto the site and back. In that direction, thus bringing up the load of arrivals and departures.

(4) On site circulation

At this point in time we do not have worked out a full site plan, therefore, proposals for on-site circulation are not going to be proposed by me for some feedback from you. However, in reading the [illegible] I hope you people would

Mike Gruenbaum March 10, 1966

Transportation Planning for the 1975 Freedom Fair

think whether their original premises of multi-type transit does make sense, and perhaps given enough lead time by Westinghouse or other corporation, whether such a system could be devised up in Boston. For example, would a Minirail leading from parking lots onto the Fair grounds, and around the Fair grounds, making a loop at the east end, then going through the Fairgrounds, over Dorchester Bay onto Columbia Point parking lot, make any sense.

In this system people would pay at the gate of the parking lot, get on a Minirail, therefore they can get out at any part of the Fair or continue all the way around to the other gate on the south where the Squantum parking lot might be.

IMPLEMENTATION OF ABOVE

After we have discussed this both internally and with you people alone and together with me, I would think we would have a position where the MBTA would be brought in for a check-out.

Having done this I presume it would be our lead, as the World's Fair Corporation, to contact such firms as Westinghouse for their response to the above system.

Is this the way you would like to handle it, or should we make MBTA take the lead and follow through. One thing we must bear in mind is that the system (part of the system) will be a permanent system as least as far as the overhead transit is concerned and that presumably it will revert to MBTA after the Fair either as an outright gift or as a sale with depreciation accounted for. Therefore, they must have some say in whether they would like to operate such a system, after the Fair.

MA:v

Westinghouse Electric Corporation

Prudential Tower
Boston, Mass. 02199
Telephone: (617) 542-0600

July 13, 1966

Freedom 75
Suite 519
10 High Street
Boston, Massachusetts 02110

Mr. Martin R. Adler
Planning Coordinator

Transit Expressway

With reference to our meeting in June, I contacted our R & D Center for more specific data on the use of the Westinghouse Transit Expressway at the Fair. As you can understand, the following data is based on many assumptions and our interpretations of the small amount of available data on the requirements of Freedom 75.

We feel that the Transit Expressway would certainly prove to be an excellent solution to your problem of moving people from Andrews Square to the Fair site. It would also appear to us that the operation of the system would most likely fall under the responsibility of the MBTA. As I expressed to you in our initial meeting, I doubt that Westinghouse would consider running the system. We have a complete system in operation at South Park outside of Pittsburgh, Pennsylvania

Preliminary Cost Estimates

(1) Four miles double track elevated construction, 20' column height, 60' spans, straight, includes guide rail and painting of steel.

Estimate - $5,600,000

(2) Control center to include computer, console, input-output equipment, communications, local cabling, and programming.

Estimate - $600,000

(3) Power and communications to include substations, power rail, track wire, and trackside cabling.

Estimate - $2,400,000

(4) Twenty vehicles including full automation and air conditioning. This will provide five 4-car trains with an average speed of 20 mph including station stops and a system capacity of about 8000 passengers per hour.

Estimate - $2,800,000

(5) Six stations including escalators and automatic fare collection.

Estimate - $2,000,000

(6) Yard and shops to include storage spur and transfer switch.

Estimate - $600,000

(7) Total cost is therefore approximately $14,000,000 to which we must add 15% for engineering. Over all of the above, it would also be required to include 10% for escalation and contingencies.

(8) Operating costs to include direct service costs (trains and stations), maintenance of plant, and rolling stock toward above average standards, and overhead including insurance.

Estimate - 12 cents/passenger trip

Please note that none of these costs include acquisition of right-of-way or associated costs such as utility relocation.

Also note that the capacity of the system can be more than doubled simply by adding more vehicles and possibly more storage and shop facilities.

I hope the above will aid you in your planning of the Fair. Should you desire to go into this in greater detail, please call.

James F. Mullervy
Sales Engineer

mb

Westinghouse Electric Corporation

Prudential Tower
Boston, Mass. 02199
Telephone: (617) 542-0600

Freedom 75
Suite 519
10 High Street
Boston, Massachusetts 02110

July 13, 1966

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James F. Mullervy
Sales Engineer

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Reference

Freedom '75-Misc. Transportation Planning.

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2507 CE-1000 APPROVED DISPLAY

PAT.PENDING